

Patent claims

1. Filter bag (1) for a vacuum cleaner, comprising a tubular bag (1) made from a bag material having at least one non - woven layer, said bag having a closed free end area (13) and an opposed, at least partially closed area (2), as well as a retaining plate, the edges of the tubular bag being at least partially interconnected by a weld seam (6) to form the partially closed area (2) and a bottom being formed by the formation at least in areas of plies of the bag material which lie the one above the other and which are at least partially interconnected.
2. Filter bag according to claim 1, **characterised in that** the weld seam (6) in the bottom (9) extends over the entire width of the bottom.
3. Filter bag according to claim 1 or 2, **characterised in that** the plies which lie the one above the other and are formed in areas of the bottom (9) by folding are connected by gluing and/or welding.
4. Filter bag according to claim 3, **characterised in that** the gluing and/or welding are/is linear.
5. Filter bag according to one of claims 1 to 4, **characterised in that** the bottom (9) is in a square shape.
6. Filter bag according to one of claims 1 to 5, **characterised in that** the bottom (9) has a rectangular shape.
7. Filter bag according to one of claims 1 to 6, **characterised in that**, starting from the bottom (9) to the closed free end (13), at least one pre-crease (3, 4, 5) is introduced in the bag material.

8. Filter bag according to one of claims 5 to 7, **characterised in that**, starting from the respective corners of the bottom (9) to the closed free end (13) in the bag material, pre - creases (3, 4) are introduced in the bag material.
- 5 9. Filter bag according to one of claims 1 to 8, **characterised in that**, starting from the weld seam (6) in the bottom (9), at least one pre -crease (5) is introduced into the bag material up to the closed free end (13).
- 10 10. Filter bag according to one of claims 1 to 9, **characterised in that** a pre-crease (7) is introduced into the bag material parallel to the weld seam (6) in the bottom (9).
- 15 11. Filter bag according to claim 10, **characterised in that** the pre-crease (7) is introduced into the bag material at a spacing from the weld seam (6) which corresponds roughly to the width of the bottom (9).
12. Filter bag according to one of claims 1 to 11, **characterised in that** the retaining plate is arranged on the bottom (9), at least partially covering same, and has at least one through hole (16).
- 20 13. Filter bag according to claim 12, **characterised in that** the retaining plate covers the entire bottom (9).
14. Filter bag according to one of claims 1 to 13, **characterised in that** on the area spread between the free end (13) and the partially closed end (2) of the bag is arranged a retaining plate which has at least one through hole.
- 25 15. Filter bag according to claim 14, **characterised in that** the retaining plate is arranged in the region of the bottom (9).

16. Filter bag according to one of claims 1 to 15, **characterised in that** the retaining plate is connected to the filter bag by means of gluing and/or welding.
- 5 17. Filter bag according to one of claims 1 to 16, **characterised in that** the retaining plate is formed from plastic s material.
18. Filter bag according to one of claims 1 to 16, **characterised in that** the retaining plate is formed from cardboard.
- 10 19. Filter bag according to one of claims 1 to 18, **characterised in that** the bag material is a non-woven composite material.
20. Method for manufacturing a filter bag according to one of claims 1 to 19, **characterised by** the following method steps:
- 15 a) producing a tubular bag and closing it on one side to form the at least partially closed area,
- b) introducing a die from the open side of the bag in the direction of the closed end of the bag so that a bottom is produced by folding,
- 20 c) connecting the plies in the bottom which are arranged the one above the other as a result of the folding.
21. Method according to claim 20, **characterised in that** the production of the tubular bag (method step a)) takes place in cycles, a tube being produced from a filter material and the open end being closed.
- 25 22. Method according to claim 20 or 21, **characterised in that**, as the open end is closed (method step a)), simultaneously the previously produced bag is closed at its free end.
23. Method according to claim 22, **characterised in that** in addition the bags are separated in the same working cycle.

24. Method according to claim 23, **characterised in that** the separation takes place mechanically.
25. Method according to one of claims 20 to 24, **characterised in that** pre-creases are introduced during method step a).
- 5 26. Method according to claim 25, **characterised in that** the pre-creases are introduced by a suitable forming tool and/or by welding.
27. Method according to one of claims 20 to 26, **characterised in that** the die is used as a sound reflector for a sonotrode.
- 10 28. Method according to one of claims 20 to 26, **characterised in that** the die is used as a sonotrode for a sound reflector.
29. Method according to one of claims 20 to 28, **characterised in that** an opening is introduced during method step a) or into the filter material forming the web.